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ORIGINAL

EX PARTE OR LATE FILED

October 30, 1996

VIA HAND DELIVERY

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

Re: **EX PARTE**
CC Docket No. 92-297

Dear Mr. Caton:

Attached is a copy of an economic analysis provided on behalf of Comcast Corporation to the following FCC staff members today in response to questions that arose at meetings earlier this month regarding cable operator eligibility to hold in-region LMDS licenses.

Jim Olson
Doron Fertig
David R. Siddall
Joseph Farrell
Meredith J. Jones
William H. Johnson
James Coltharp
Jackie Chorney
Walter Strack
Robert James
David Wye
Elizabeth Lyle
Michele Farquhar
Thomas Koutsky
John Berresford
Joseph A. Levin
Gregory Rosston
Thomas C. Power
Barbara Esbin
Suzanne Toller
Gregory Rosston
Susan Magnotti
Jane Phillips
Mark Bollinger
Rudolfo M. Baca
Rosalind K. Allen

This letter is being filed in original with two duplicates pursuant to the Commission's rules. If you have any questions, please do not hesitate to contact the undersigned.

Respectfully submitted,

Michael S. Schooler
Counsel for Comcast Corporation

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Enclosure
cc: Jim Olson
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John Berresford
David R. Siddall
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Mark Bollinger
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Competition and Cable Pricing: A Review of Theory and Evidence

Steven S. Wildman
Northwestern University
and
Law and Economics Consulting Group

Introduction

A question that FCC staff raised in our recent meeting with them was whether we had any evidence that cable systems had responded to DBS competition by lowering their prices. The direct answer was that we had no evidence of such a response. To some present, this seemed to be dispositive evidence that cable and DBS are not close substitutes. A similar conclusion was drawn in the FCC's 1995 Competition Report, where it was observed that the FCC's own study of overbuild competition showed that cable service prices declined with overbuilding, while a casual analysis suggested there was no price response to competition from DBS services.[1] This review of theory and evidence regarding overbuild competition suggests another response to this question: That competitive responses to entry may not take the form of reductions in the price of basic service. Rather, what we see are improvements in the package of basic services offered subscribers at the original price. The result is a lower quality-adjusted price even though the nominal price may be unchanged. In fact, I show below that this outcome is consistent with empirical findings of the FCC's econometric analysis of the price effects of overbuild competition--once they are properly interpreted. In addition, there are other empirical studies of overbuild competition that find a positive effect of competition on the number of programmed channels offered subscribers, but no effect on the price of basic service.

This review is organized as follows. First it is shown in Section I that that economic theory allows for a cable company facing effective competition from new MVPDs to respond by increasing the number of channels of programming offered without changing the price of basic service. Section II shows that there are no empirical studies that would support an expectation that cable service prices should fall as competition intensifies. The appropriate interpretation of the FCC overbuild study results is that competition reduces the price per channel; however, this finding is contradicted by other studies. (It is also worth noting that a finding that entry has no effect on price is consistent with the possibility that the benchmark rates—as subsequently adjusted—were set at or below competitive levels. In this case entry would not lower prices.) Even if a competitive reduction in price per channel is granted, as the number of channels offered increases in response to competition, actual payments by subscribers may fall, increase, or stay the same. The belief at the FCC that cable subscribers should pay less as more competitors enter the MVPD market is based on a mistaken interpretation of their empirical findings to mean that actual service prices fall with competition. Cable systems are then faulted for not responding to DBS competition in accordance with this mistaken interpretation of the FCC empirical study.

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[1] It should be noted that this casual examination of cable responses to DBS competition did not incorporate evidence of price reductions that might have been offered as discounts on cable service in multiservice packages sold by cable companies that bundled cable service with other communication services. For example, Comcast has offered discounts on cable service when purchased in conjunction with Sprint long distance service.

I. Theory does not support a clear prediction that cable operators will respond to competition by lowering prices.

In analyzing the pricing of cable services, whether in competitive or non competitive markets, it is important to keep in mind that both the price charged cable subscribers and the quality of service provided are choice variables to the cable operator. While quality of service has a number of other dimensions (such as frequency of service interruptions and response time to subscriber complaints), this analysis assumes that the number of channels of programming offered subscribers is synonymous with quality (this also abstracts from the fact that subscribers typically can choose among a variety of programming packages). Both price and the number of channels are adjusted in the cable operator's profit calculus, since both affect revenues and costs. Holding the number and types of channels constant, price affects revenue by determining the number of subscribers and revenue per subscriber and it affects cost through its effect on the number of subscribers. Service quality affects revenue through its effect on the tradeoff between price and the number of subscribers and it affects costs through both direct expenditures on quality related variables (the cost of additional channels) and through its effect on the number of subscribers. Quality is a matter of considerable interest to a cable operator because cable subscribers are willing to pay more for higher quality service and, for any level of price, subscribership will be higher the higher is quality. Note that both of these relationships hold, whether a cable operator encounters competition or not.

From the (potential) subscriber's perspective, it is the quality adjusted price of service that matters in deciding whether to take cable service or to subscribe to one of the alternatives, such as DBS, or to get by with only what's available over-the-air. This means that in responding to competitive threats, cable operators can respond by changing either the price or the quality of their offerings, or by varying the two in combination. Thus, by ignoring the quality side of the profit calculus, the question of whether cable operators have responded to DBS competition by lowering price--with the implied conclusion that if the answer is no then DBS is not real competition to cable--inappropriately rules out potentially vigorous competitive responses by cable companies in the form of quality improvements. In fact, it is not hard to see why incumbent cable operators might respond to entrants offering service packages attractive to their customers by adding more channels rather than by lowering price. For an incumbent facing entry for the first time, the importance of a competitive response is to retain customers it already has since the entrant has none for it to take. Thus if, say, a 10% reduction in price is required to match an entrant's quality adjusted price, the result is a 10% reduction in revenues even if no current subscribers are lost. Note that this is a 10% reduction in revenues in perpetuity, so the capitalized value of the price reduction is much greater. As long as increased expenditures on new services, including upgrades to cable plant, that would allow the incumbent cable operator to match the entrant's quality adjusted price by improving service quality come to less than the revenue that would be sacrificed to accomplish the same result, the incumbent cable operator would be expected to choose the option of service enhancement.

Theoretically, either response is possible, depending on the costs of adding new programming services. Which dominates in the real world can only be determined empirically. When we turn to the empirical evidence regarding cable responses to competition, we find that, while their results are not entirely consistent, the empirical studies that have been produced support the interpretation that cable operators have responded to competition by increasing the number of channels of service offered, without reducing nominal prices. While quality-adjusted prices have fallen, nominal prices have not. On the other hand, if properly interpreted these studies do not provide evidence that cable operators drop their nominal prices in response to competition.

II. The Evidence

Empirical studies of the responses of cable operators to competition have examined the effects of competition from over the air broadcasters and cable overbuilds. This review focuses primarily on four relatively recent econometric studies of overbuild competition, although, as will be discussed later, certain of the findings of studies of broadcast competition to cable are helpful in interpreting the results of the overbuild studies. While both surveys and econometric methods have been employed to examine the effects of overbuild competition on the prices of cable services, there is sufficient variation among systems in a number of factors that might be expected to influence programming and pricing decisions that only careful use of statistical methods can provide reliable evidence as to how these factors influence cable prices. The four econometric studies reviewed here employed three separate data sets with observations from the 1987-1992 period when rates for most cable systems were unregulated. The studies reviewed are an analysis of cable pricing by the FCC (1994), a study of paired overbuild and non overbuild systems by Levin and Meisel (1991), a study by Dertouzos and Wildman (1993) using a data set developed by NCTA, and a study by Kim (1996) that also uses the FCC data set. The FCC regression results examined here were selected for analysis because this study is a refinement of an earlier regression analysis that was used in support of the initial 10% rollback in cable system prices. Responses to criticisms of the earlier study were incorporated in the FCC's 1994 analysis. While each of these studies used regression techniques to examine the effect of overbuild competition, differences in dependent variables and specifications of estimating equations resulted in parameter estimates that are not strictly comparable to each other. However, in combination the four studies permit a more nuanced analysis of what motivates cable pricing than is possible with any one of them individually.

A few comments regarding the FCC and NCTA data sets are in order. The FCC study was based primarily on the results of a survey of cable system operators conducted expressly for the purpose of examining factors affecting cable systems prices and constructing a set of benchmarks for implementing rate regulation. The FCC augmented the survey results with data from various public sources. The Kim study also employed the FCC data set, which was made publicly available. Kim further augmented the FCC data with data from other sources. The Dertouzos and Wildman study employed a data set compiled by the National Cable Television Association to conduct independent, but parallel, analyses of the questions addressed by the FCC. Running the same regressions with the FCC and NCTA data sets produced similar regression coefficients, which suggests that the two data sets have similar statistical properties. However, additional data incorporated in the NCTA data set allowed for regressions with different specifications than those run by the FCC.

The differences in statistical methods, dependent variables examined, and empirical findings regarding the effect of overbuild competition for the four studies are summarized in Table 1.

Table 1
Summary of Four Studies

Study	Data Year	Type of Regression	Dependent Variable(s)	Empirical Effect of Overbuild Competition
FCC (1994)	1992	OLS	Price of Basic Cable	16% reduction in price
Levin and Meisel (1991)	1990	OLS	Price of Basic Cable	$2.94-$3.33 price reduction
Dertouzos and Wildman (1993)	1992	OLS	Price of Basic Cable	No statistically significant effect
			# Basic Channels	No statistically significant effect
			# Basic Subscribers	Significant negative effect
Kim (1996)	1992	OLS	Basic Price per Channel	No statistically significant effect
			# Basic Channels	Significant Positive Effect
			# Basic Subscribers	Marginally Significant Negative Effect
		2SLS	Basic Price per Channel	No statistically significant effect
			# Basic Channels	Significant Positive Effect
			# Basic Subscribers	Significant Negative Effect

Because the four studies examined different dependent variables, the extent to which their results are or are not inconsistent with each other is not immediately apparent. Most glaring is the apparent inconsistency of the Levin and Meisel and FCC findings of statistically significant reductions in the price of basic service due to overbuild competition with the Dertouzos and Wildman finding of no statistically significant effect of overbuild competition on price. The apparent conflict between the price effect findings of these two studies dissolves, however, when the explanatory (independent) variables employed in these studies are compared. The explanatory variables employed in all four studies are summarized in Table 2.

Table 2
Comparison of Independent Variables

Independent Variable	Study			
	Lee	Dertouzos & Wildman	FCC[2]	Levin & Meisel
Overbuild	X	X	X	X
Competition				
Households in Franchise Areas	X	X		
Average Income	X	X		
Head end age	X	X		X
MSO ownership	X	X	X	
Broadcast Competition	X	X	X	
Channel capacity	X			
Integration into programming	X			
Household density	X			X
Average Wage	X			
Projected Pop Growth	X			
Retail Sales Growth	X			
Subscriber Age	X			
Household Size	X			
% Households w/ Children	X			
% Pop. w/ College Edu.	X			
# Subscribers			X	
# Channels Programmed (Various Measures)			X	X

A comparison of the independent variables employed in the OLS regressions of Dertouzos and Wildman with those employed in the OLS price regressions of the FCC and Levin and Meisel suggests an explanation for the differences in estimated price effects of overbuild competition. Of particular interest are # Subscribers and # Channels, the two variables below the dashed line in Table 2. Both of these variables were treated as dependent variables (variables whose values are not exogenously fixed, but reflect the consequences of cable operators' responses to varying cost, demand and competitive conditions in their markets) in the Kim and the Dertouzos and Wildman studies, but were

[2] In the discussion of its regression results, the FCC stated that it tried variations on the equation reported that included various of the independent variables included in the Kim and Dertouzos and Wildman studies, but did not report the results of these regressions because they did not improve the statistical fit of the regression. The results of these alternative specifications were not reported.

employed as independent variables (exogenous variables whose values must be taken as fixed by cable system operators) in the FCC and Levin and Meisel studies. Clearly the number of channels programmed, as well as the types of channels provided, are choice variables set by cable system operators. They are thus endogenous, not exogenous variables. Similarly, because subscribership varies with price and the programming offered, which are dependent variables, the number of subscribers should also be treated as a dependent variable. Thus it is likely that there is some bias in the FCC and Levin and Meisel estimates due to the inappropriate use of dependent variables as independent variables in their estimating equations.[3]

There are no unambiguous empirical conclusions that can be drawn from this collection of four studies. Kim finds a significant positive effect of competition on the number of channels programmed, while Dertouzos and Wildman find no significant effect (although their coefficient is positive). Kim's finding of a constant price per channel is inconsistent with the FCC and Levin and Meisel's estimates of the price effects of overbuild competition, which, when properly interpreted, predict a reduced per channel price. (This is explained below.) Given this interpretation, the FCC and Levin and Meisel results are consistent with the Kim finding that cable operators respond to competition by providing more basic channels and the Dertouzos and Wildman finding that the nominal price of cable service (unadjusted for changes in quality) does not change in response to overbuild competition. The charge for additional channels restores the nominal price to its original level. The specification biases associated with treating endogenous variables as independent variables in the FCC and Levin and Meisel studies suggest that the Kim and the Dertouzos and Wildman findings are more reliable on purely statistical grounds. However, even if the FCC and Levin and Meisel findings are accepted at face value, it is important to note that they do not support the conclusion that cable operators would respond to competition (overbuild, DBS, or other) by providing service at a lower absolute price. This becomes clear when these equations are properly interpreted.

The proper interpretation of the coefficient of a given independent variable in a regression equation is that it gives the effect of variation in that independent variable on the value of the dependent variable in the equation when all other independent variables are held fixed and invariant. Thus, the regression coefficients on the overbuild variable in the FCC and Levin and Meisel equations should be appropriately interpreted as the difference in the price of basic service that would be observed if a cable system with an overbuild competitor was compared to another cable system with exactly the same number of programmed channels and a comparable mix of program services that was the only provider of cable service in its franchise areas. However, there is no reason to expect a system encountering overbuild competition to offer the same number of channels as a system with no multichannel competitors. The Kim regressions, based on the same data set as the FCC study, found a significant positive effect of overbuild competition on the number of channels of programming offered subscribers. (While the Dertouzos and Wildman study did not find a statistically significant effect of overbuild competition on the number of channels offered, the coefficient estimated was positive. Furthermore, the Kim and FCC studies were able to allow for variation in the percent of a system's subscribers with an overbuild option, while the Dertouzos and Wildman study employed a simple zero/one dummy variable which could only reflected the presence or absence of overbuild competition, and thus could not be sensitive to degrees of overbuilding.) Given that the

[3] The FCC may have included programming and subscriber measures as independent variables in its regression because the regression was also to be used to develop benchmark prices and number of channels and subscribers were to be part of the benchmark formula. However, this very practical consideration cannot justify treating endogenous variables as exogenous for purposes of estimating the effect of overbuild competition on cable prices.

FCC and Levin and Meisel studies estimate the effect of overbuild competition for a fixed set of programmed channels, the negative coefficients for the overbuild variables in these studies can only be interpreted as evidence that price per channel falls with competition. (While statistically insignificant, Kim's coefficient for the effect of overbuild competition on price per channel is negative.) However, both the FCC and Kim regressions show that the price of basic service increases with the number of channels offered, which should increase the nominal price. So neither the FCC study nor the Levin and Meisel study justifies a prediction that cable operators will respond to competition by lowering the price of basic service. Depending on the magnitude of the effect of competition on the number of channels offered, the findings of these two studies are consistent with competitive nominal (unadjusted for quality) prices for basic service that are lower than, higher than, or unchanged relative to the nominal price observed prior to competition. The latter outcome would be consistent with findings by Dertouzos and Wildman (1990) in an earlier study of broadcast competition to cable that showed that cable systems responded to broadcast competition by expanding the number of channels offered and reducing the price per channel, with the net result that the nominal price of basic service was unchanged.[4]

References

Dertouzos, J. N. and Wildman, S. S. (1990), "Competitive Effects of Broadcast Competition to Cable," Attachment to Comments of NCTA in FCC filing: MM Docket Nos. 89-600 and 90-4.

_____ and _____, (1993), "Regulatory Benchmarks for Cable Rates: A Review of the FCC Methodology," Attachment to Comments of Viacom filing on June 21, 1993: MM Docket 92-266.

FCC, Appendix C to the Second Order on Reconsideration, Further Report and Order, and Fifth Notice of Proposed Rulemaking in the Matter of Implementation of Sections of the Cable Television Consumer Protection and Competition Act of 1992: Rate Regulation: MM Docket No. 92-266.

Kim, E. (1990), Standardization and Diversity in Cable System Programming, Dissertation in Progress, Northwestern University. (Tentative title)

Levin, S. L. and Meisel, J. B. (Dec. 1991), "Cable Television and Competition: Theory, Evidence and Policy," Telecommunications Policy, 15(6), pp. 519-518.

[4] The fact that cable operators appear to respond to broadcast and overbuild competitors in a qualitatively similar way is inconsistent with the argument that overbuild competition has no effect on (nominal) cable prices because competing cable companies eventually learn to cooperate and restore prices to their original levels. Over-the-air broadcast service is free, so there is no price to cooperate on. Plus, the quality of programming is set by national networks for network affiliates, the most popular of the over-the-air services, which eliminates the possibility of coordination on quality.